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Mentors Views on Mathematics and Science Student Teachers School Experience

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Abstract
This study investigated mentors' views on Mathematics and Science student teachers' school experience with a focus on student teachers' classroom management practices, instructional strategies, student-mentor relationships, behaviour patterns, and participation in co – curricular activities. It utilized a descriptive survey design on a sample of 60 mentors, 43 males and 17 females, randomly drawn from the departments of Mathematics and Natural Sciences in twenty two (22) secondary schools across Zambia. Questionnaires and focus group discussions were used in data collection. SPSS was used to analyse quantitative data to arrive at descriptive statistics such as frequencies, means and standard deviations while qualitative data were transcribed and then analysed using Atlas.ti. The study revealed that mentors had positive thoughts of Mathematics and Science student teachers' classroom management practices, and instructional strategies. It was also evident that a positive rapport was created between mentors and student teachers and that mentors saw Student Teachers' behavioural patterns as generally acceptable and upheld professional ethics. Furthermore, mentors were satisfied with the levels of student teachers' participation in co – curricular activities. The study results revealed, therefore, that mentors had positive thoughts of the student teachers school experience.

Keywords: Student Teachers, Mentors, School Experience, Classroom Management, Instructional Strategies, Behavioural Patterns, Co - Curricular Activities, Mentoring

BACKGROUND

School experience is vital in the preparation of Mathematics and Science teachers because it offers student teachers unique experiences (Kiggundu & Nayimuli, 2009). It may be considered as one of the most significant milestones in the training of student teachers (Brimfield & Leonard, 1983) because of its beneficial impact on them (Guyton & McIntyre, 1990). It generates excitement in student teachers and provides an avenue for them to be a part of a real classroom setting, of getting to know pupils, of planning and organising instructional strategies, (Perry, 2004),

of creating student teacher - mentor relationships, of displaying acceptable behaviour patterns and of participating in co – curricular activities. School experience refers to all the learning experiences of student teachers in schools during which period student teachers exercise self - reflection, implement a variety of approaches, strategies and skills (Kombo & Kira, 2013) within and outside the classroom.

During school experience, student teachers observe mentors (qualified teachers) at work so as to learn about their teaching skills, strategies and classroom management, behaviour patterns and involvement in other school activities (Marais & Meier, 2004) and evaluate their own school experiences through interactions with mentors. Mentors are volunteer-experienced teachers in various disciplines and assume multi-faceted roles of being guides, counsellors, overseers, coaches, models, supporters, critics and instructors to student teachers during school experience in a process referred to as mentoring (Ganser, 1996; Haney, 1997; Holloway, 2001; Maphosa, Shumba & Shumba, 2007; Chakanyuka, 2006; Nilsson and Van Driel, 2010). Mentoring has no one standard definition (Halai, 2006; Wunsch, 1994), but often considered as a collaborative effort involving university supervisors, school administrators, mentors, and student teachers (He, 2010; Schwille, 2008) in preparing teachers for the increasingly challenging in and out of classroom environment is a critical aspects in the training of teachers of mathematics and science.

Mentors play a critical role in providing support and guidance to student teachers who face numerous challenges as they seek to motivate pupils, plan and implement curriculum, provide instruction and take up responsibilities and roles (Roehrig, Pressley, & Talotta, 2002), to ensure that student teachers effectively undertake the school experience. It is here that mentors come in to serve as collegial and emotional supporters, providers of feedback, gatekeepers of the profession, modellers of practice, supporters of reflection, gleaners of knowledge, purveyors of context, conveners of relation, agents of socialization, advocates of the practice and abiders of change to student teachers (Clarke, Triggs, & Nielsen, 2014) for this challenging phase of their school experience. Research on mentors' perceptions of student teachers' school experience has revealed that mentors feel responsible for the professional growth of student teachers (Koskela & Ganser, 1995; Anold, 2002). Vacc and Bright (1999) have shown that mentors have great influence on the student teachers' professional development in pedagogical and content knowledge and other aspects throughout the mentoring process. This is supported by Frykholm (1996) who reveals that two - thirds of mathematics student teachers modelled the teaching styles of their mentors. Since mentors spend more time with student teachers (Maria & Evrim, 2009) and are among the most relevant variables in student teaching (Milner, 1959; Yee, 1969), mentors are better situated to provide their views regarding mathematics and science student teachers' school experience.

Despite mentors having their own challenges and difficulties, most of them still feel enthusiastic and committed to their work with student teachers. According to Yendol-Hoppey (2007), once mentors become committed to mentorship, they enter into a special relationship with the student teachers that make them to develop positive attitudes towards assisting the less experienced teachers. Accordingly, mentorship is a special form of teaching that requires particular skills and abilities (Schatz - Oppenheimer, 2016).

According to Perry (2004), student teachers on school experience are excited of being a part of real classroom settings, of getting to know pupils, of planning and organising the classroom tasks. They want to exercise self - reflection, implement a variety of approaches, strategies and skills in their teaching with a view of bringing about meaningful learning (Kombo & Kira, 2013). All these are aspects of classroom management which refers to any action teachers take to create environments that supports and facilitates academic and social-emotional learning (Evertson & Weinstein, 2006) ensuring the smooth running of classroom lessons to meet pupils' developmental needs. This is achieved through the use and organization of the classroom space, the daily schedule and routines in spite of pupil's strengths, weaknesses, individual differences and disruptive behaviour (Dodge, Rudick and Colker, 2009). It involves the prevention of undesirable and disruptive pupil's behaviours (Berliner, 1988) and maintenance and continuity of an orderly atmosphere arising from student teachers' ability to effectively plan, organise, decorate classrooms, structure classroom interactions, establish and enforce classroom rules and prepare materials for the classroom lessons (Tan, Parsons, Hinson, & Sardo-Brown, 2003).

With reference to classroom management, Dreikurs, Grunwald and Pepper (1998) are convinced that the goal of student teachers' school experience is considering and satisfying pupils' developmental needs by creating conducive learning environments, stimulating sights, relaxing sounds and good ventilation. Feldman (1998) views a classroom as a place where pupils should feel comfortable and at ease. Positive school experience enhances effective classroom management which is a critical ingredient of effective teaching (Marzano, Marzano, & Pikering, 2003) with the potential to positively affect the pupils' academic performance and attracts the attention not only of student teachers but also of mentors and other stakeholders in the education sector. Classroom management attracts mentors interests to observe the students' progress, behaviour and attitude at school, and assess the student teachers' practical teaching and learning activities. Kiggundu and Nayimuli (2009) suggest that some mentors do not have confidence in the student teachers' classroom management approach and consequently are unwilling to surrender their classes to student teachers because they felt that student teachers delayed and wasted pupils' valuable time. In their study, Kiggundu and Nayimuli (2009) argue that mentors find class control, timing, maintaining pupils' attention, getting and keeping a class quiet, keeping children on task were problematic for student teachers.

Instructional strategies are critical for effective lesson delivery. Teaching is a demanding task for both student teachers and experienced teachers since it involves many instructional skills. It is therefore not surprising for student teachers to be anxious in actual classroom situations because of teaching methods and strategies to use (Freiberg & Driscoll, 2005). Encounters such as difficulty in choosing and using teaching strategies and techniques are also important concerns and are perceived as critical for successful teaching in order to achieve positive learning outcomes (Goh & Matthews, 2011). Hudson (2013) identified the use of appropriate teaching strategies as one of the desirable practices mentors expect of the student teachers. It was expected therefore that mentees would build a repertoire of teaching strategies, be willing to try new teaching strategies, possess knowledge of and be prepared to use various strategies to identify what works best and be able to work out own teaching strategies based on best practice. In fact Kagoda and Sentongo (2015) in their study found that mentors were of the view that student teachers exhibited a masterly of the subject matter in the areas of specialization and used effective and appropriate instructional strategies in their teaching. They actually noted some student teachers were extremely excellent in the way they did their work as if they were regular teachers.

Student teachers' interactions with Mentors' can result in a fruitful or disappointing interpersonal relationships. In fact mentoring could be considered as a nurturing relationship based on mutual trust, shared and common values, goals, and understandings that leads to the development and professional growth of both the mentor and mentee (Halai, 2006; Tauer, 2002). Establishing rapport is very important in mentor – student teacher relationship during school experience as it enables the mentor and student teacher to develop trust and confidentiality which are critical in a student teacher's goal attainment (Samkange, 2015).

The nature of relationship existing between the mentor and mentee greatly influences the success of mentoring process. A positive relationship is an important ingredient for the mentor's enthusiasm that can present desirable teaching and non-teaching traits for a student teacher to model during school experience (Hudson, 2010). It can safely be said that a good mentor – student teacher relationship is a precursor to boosting the morale and confidence of the student teacher because the mentor introduces collegial supervision, where the mentor and mentee criticise each other on professional issues (Lu, 2010). In the interest of the student teacher, Li (2009) indicated that there are times when mentors take an authoritarian role on the rights and wrongs of student teachers' teaching and execution of other duties while managing to maintain trust and warm relationships. However, tensions can arise between mentor-mentee due to lack of open communication and disparate beliefs (Bradbury & Koballa, 2008), a wide gap in age differences (Maphosa & Ndamba, 2012) making it difficult for a mentor to provide the needed assistance to the mentor and to be flexible and appreciate new ideas from student teachers (Tomlinson, 1995). Interestingly however, research has shown that during school experience most mentors have reported that the student teacher – mentor relationship is good and impacting student teachers positively (Maphosa & Ndamba, 2012). On the other hand there are a few mentors that developed poor working relationships with student teachers.

Student teachers' behaviour patterns during school experience are critical during school experience. With regard to behaviour, Kagoda and Sentongo (2015) stated that mentors were of the view that student teachers had fairly

good professional ethics and dressed well except some female student teachers who dressed poorly. The behaviour of student teachers was influenced by the behaviour of mentors (Bubb, 2010) and therefore a mentor, who exhibited pomposity and arrogance, promoted negative attitudes from student teachers. Among some of the unprofessional conducts and act that mentor engaged in were absenting themselves from duty, reporting late or sending pupils for personal errands even during lessons (Kiggundu & Nayimuli, 2009). Mapolisa and Tshabalala (2014) assert that what student teachers wore was in a way a product of what they observed mentors dress. According to Korthagen and Evelein (2016), student teachers' behaviour is also influenced by their needs fulfilment. Student teachers displayed desirable behaviours if their needs were met but thwarted needs induced in them fight, flight or freeze tendencies (Korthagen & Evelein, 2016).

School experience is aimed at ensuring that student teachers contribute to the school and school community by participating in co-curricular activities, and community events. During school experience, student teachers have the opportunity to get involved in all aspects of curricular as well as co-curricular activities which include teaching, clubs and sports. In fact Marais (2011) revealed that it was important for student teachers to actively participate in co- curricular activities during school experience in order to prepare them for their teaching career. Kiggundu and Nayimuli (2009) further revealed that student teachers' participation in co-curricular activities is excessively limited even when schools were requested to allow student teachers to be actively involved in them. Kiggundu and Nayimuli (2009) also indicated that sometimes student teachers even excluded themselves from sporting activities.

Mentors by virtue of the interest they have in the welfare of the classes they surrender and also their responsibility to provide guidance to the student teachers are better situated to provide and account for student teachers' classroom management, instructional strategies, student teacher - mentor relationships, behaviour patterns, and participation in co – curricular activities during their school experience.

PROBLEM STATEMENT OF THE STUDY

A generally accepted view is that during school experience, Mathematics and Science student teachers need to perform a variety of roles and demonstrate various qualities in classroom management, instructional strategies, and student teacher - mentor relationships, their behaviour patterns and participation in co – curricular activities. During this period there is an undeniable link between mentors and student teachers. Whilst there is a lot of research dealing with student teachers' views on mentors, there is scanty research providing mentors views on student teachers school experience in spite of their immerse contribution to the professional development of these trainee teachers (Hudson, 2010). This study was therefore undertaken to investigate mentors' views of Mathematics and Science student teachers' school experience. In particular, the study focused on mentors' views of student teachers relating to classroom management, instructional strategies, and student teacher - mentor relationships, their behaviour patterns and participation in co – curricular activities.

OBJECTIVES OF THE STUDY

This research sought to descriptively determine mentors' views of Mathematics and Science student teachers' school experience.

The study was guided by the following questions;

1. What are the mentors' views of Mathematics and Science student teachers' classroom management practices during school experience?
2. What are mentors' perceptions of science and mathematics student teachers' instructional strategies?
3. What are mentors' views on student teacher – mentor relationships during student teachers' school experience?

4. How do mentors view Mathematics and Science student teachers' behaviour patterns while on school experience?

5. Do Mathematics and Science student teachers on school experience participate in co – curricular activities?

METHODOLOGY

This study utilized a descriptive survey design focusing on mentors' views on mathematics and science student teachers' school experience. It used a randomly selected sample of 60 mentors from departments of Mathematics and Natural Sciences in twenty two (22) secondary schools in Zambia consisting of 43 male and 17 female mentors. Forty two (42) of these mentors responded to the questionnaire while eighteen (18) of them participated in the focus group discussions. These mentors, with teaching experience from 1 to 25 years, taught either mathematics, chemistry, biology or physics.

Questionnaires and focus group discussions were used in data collection. The use of the questionnaires was arrived at because it provided a quick and easy way of obtaining mentors' perceptions. A pilot study was conducted with mentors in the nearby secondary schools to ensure the questionnaire's validity. Data were collected during student teachers' school experience by twelve supervisors who were monitoring student teachers. The Statistical Package for the Social Sciences (SPSS) was used to analyse the quantitative data to arrive at descriptive statistics such as frequencies, means and standard deviations while qualitative data were transcribed and then analysed using Atlas.ti.

FINDINGS

The study investigated mentors' views of mathematics and science student teachers school experience. In this section major themes that emerged from data analysis are presented.

Classroom Management

In the questionnaire -mentors were asked to rate the student teachers' class management skills on a four point scale from very good, good, fair and poor. The findings indicate that 80.5% of the mentors rated student teachers' classroom management abilities from good to very good. In fact 87.8% of the mentors indicated that student teachers managed their classes well while 4.8% of them stated that student teachers failed to effectively manage their classes. Another question was on whether or not the mentors felt it was necessary for student teachers to improve in their classroom management.

The focus group discussion revealed that generally student teachers managed their classrooms well. Mentors were impressed with student teachers' ability to teach and deal with issues arising from the pupils. In their view "some student teachers had very good management skills".

However, 15% of the mentors felt that some student teachers failed to provide effective classroom management on account of small age differences between them and the pupils. According to these mentors, student teachers established very intimate relationships with pupils so that "sometimes it was difficult to distinguish between a pupil and a student teacher".

Professionalism, Content Delivery, Teaching Skills and Student – Mentor Relationship

Mentors were asked to provide their views on student teachers' professionalism, content delivery, teaching skills and student – mentor relationships by rating them from poor, fair, good and very good. Results showed that the majority of mentors rated student teachers' professionalism at 51.2%, content delivery at 83.2%, teaching skills at 90.2% and student mentor relationship at 87.8% as good to very good as shown in Table 1.

Table 1: Student teachers' professionalism, classroom management, content delivery, teaching skills and mentor relationship

	Number of respondents = 42			
	Very good (%)	Good (%)	Fair (%)	Poor (%)
Professionalism	14.6	36.6	46.3	2.4
Content delivery	29.3	53.7	17.1	0
Teaching skills	19.5	70.7	7.3	2.4
Student teacher – mentor relationship	29.3	58.5	12.2	0

Most mentors in the focus group discussions stated that student teachers had adequate subject content in their specialisation and were professional in their classroom management. Mentors stated that student teachers ensured that classrooms were well managed before they were visited by supervisors after which some of them relaxed. The student teachers faced challenges in content delivery and pedagogy or transmission of the content. They felt student teachers sometimes failed to align lesson objectives to the content. They suggested that they should be exposed more to education courses to improve their pedagogy.

Class Discipline

On class discipline, most mentors revealed that student teachers rarely had disciplinary problems (51.3%), sorted out disciplinary cases effectively (65.9%), were familiar with problem solving structures (73.0%) and used problem solving structures often (51.2%). Conversely only 31.6% and 24.4% of the mentors disagreed that student teachers rarely had disciplinary problems and used problem solving structures often respectively as shown in Table 2.

Table 2: Student teachers' ability to deal with class discipline

	Number of respondents = 42				
	Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Student teacher rarely had disciplinary problems with pupils	22	29.3	14.6	29.3	2.4
Student teachers sorted out disciplinary cases effectively	17.1	48.8	24.4	9.8	0
Student teachers familiar with problem solving structures	12.2	61.0	9.8	14.	2.4
Student teachers used problem solving structures often	7.3	43.9	24.4	22.0	2.4

The focus group discussion revealed that most student teachers were able to ensure classroom control and pupil discipline. Mentors highly commended mathematics student teachers for being very good in classroom management. A few of them failed to control classes because they created very close pupil – teacher relationships which inhibit effective classroom management. Mentors noted that with time even those that had challenges were able to control pupils and maintain discipline.

Resourcefulness and creativity

Mentors were asked questions on whether student teachers were resourceful and creative to create an enabling environment for effective teaching and learning to take place. It was revealed that 70.8% improvised teaching materials when need arose, 90.2% created an enabling environment, 63.2% prepared classroom layout for lessons and 80.5% ensured that the classroom layout remained conducive for teaching and learning. Table 3 presents the rest of the details.

Table 3: Mentors responses on student teachers resourcefulness and creativity

	Number of respondents = 42				
	Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Student teachers created enabling environment	14.6	75.6	2.4	7.3	0
Student teachers always prepared classroom layout for lessons	14.6	48.8	12.2	22.0	2.4
Student teachers' classroom layout was conducive to learning	19.5	61.0	7.3	9.8	2.4
Student improvised when need arose	4.9	65.9	9.8	14.6	4.8
Student always resourceful	9.8	58.5	4.9	24.4	2.4

Mentors unanimously agreed that student teachers created environments that were suitable for teaching and learning. Focus group discussions revealed that whilst a good number of student teachers used teaching aids, fewer science student teachers did so compared to the mathematics counterparts. Further it was reported that mathematics student teachers were more resourceful than science student teachers.

Lesson preparations

With regard to lesson planning, 83.0% of the mentors indicated that student teachers prepared detailed lesson plans that could be used by other teachers in the event that they were not available, 75.6% reported that student teachers were ready to improve their lesson plan preparation, 85.9 % said that training institutions adequately prepared student teachers while 21.9% of them felt that student teachers were not ready for the exercise at the time they report for school experience. Additionally 70.8 % of the mentors indicated that student teachers planed their work in advance, 82.7% said that student teachers used different lesson plans for different classes at same level and 81.0% indicated that student teachers' language in class was always simple, clear and unambiguous. Table 4 provides the rest of information

Table 4: Mentors Responses on student teachers' preparedness for lessons

	Number of respondents = 42				
	Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Student required improvement in lesson planning	36.6	39.0	2.4	19.5	0
Detailed lesson plans usable by another teacher	17.1	65.9	4.9	12.2	0
Student was ready when they came for school experience	17.1	48.8	12.2	19.5	2.4
Student used different lesson plans for different classes at same level	17.1	53.7	7.3	22.0	0
Student always planned work before teaching	36.6	56.1	2.4	2.4	2.4
Student teachers language always, simple, clear and unambiguous	14.3	66.7	7.1	9.8	0

From the focus group discussion mentors stated that student teachers were ready for school experience, had "excellent knowledge in content though they had challenges in pedagogy", prepared lesson plans for different lessons and classes of the same level , always had teaching aids and majority of the student teachers regularly prepared satisfactory lesson plans. Mentors also stated that a few student teachers had problems of lesson

preparation, writing of the objectives, were too proud to learn from the mentors, never used teaching aids, refused to adopt lesson plans they found in schools and adopted attitudes of some serving teachers of not writing lesson plans after they had been observed by supervisors. Mentors proposed that student teachers with pedagogical challenges should be exposed to educational courses like psychology and sociology to help them improve in lesson preparation

Student Teachers' Instructional Strategies

Concerning instructional strategies student teachers used, 48.8% of the mentors were of the view that they used learner centred approaches, 68.3% extensive group work and allowed learners to work on their own in groups respectively. Concerning which teaching strategies they often used, rarely used or did not use, 48.8% of the mentors indicated class discussions 64.3% lecture method, and 58.5% problem solving were often used while for those rarely used or completely ignored 70.7% them indicated experiments, 95.2% project method, 82.9% role play and 78.0% field trips as shown in Table 7.

Table 5: Mentors responses on student teachers' preferred teaching strategies.

	Number of respondents = 42		
	Often used (%)	Rarely used (%)	Did not use (%)
Experiment	29.3	46.3	24.4
Class discussion	87.8	9.8	2.4
Group discussion	48.8	48.8	2.4
Project method	4.8	39.0	56.1
Inquiry	48.8	39.0	12.2
Discovery	29.3	46.3	24.4
Role play	17.1	34.1	48.6
Field trips	22.0	73.2	4.8
lecture	64.3	19.5	14.6
Problem solving	58.5	36.6	4.9
Problem based	41.5	39.0	19.5

Arising from the focus group discussion, when requested to provide reasons why student teachers preferred one teaching strategy over the other, mentors indicated that student teachers preferred methods that were less involving in preparation, ensured that effective classroom control and were cost effective. According to them some strategies like field trips and role play were not familiar to student teachers. Mentors also reported that most science student teachers took learners to the laboratory and carried out experiments particularly before they were observed by the lecturers while in some cases laboratories were used as normal classrooms.

Student teacher – mentor relationship

When asked to give their views on student teachers – mentor relationship, 29.3% and 58.5% of the mentors felt that the relationship between them and mentors was very good and good respectively. On the other hand 12.2% of them indicated that the relationship was fair while 2.4% of them saw the relationship was poor. Further 92.7% of the mentors stated that students responded to the advice, 90% that student teachers acted on the given advice and 92.9% that they found them useful in the school. However 2.4% and 4.8% of the mentor felt that student teachers did not respond to the advice or act on them respectively. Table 6 presents the information figuratively.

Table 6: mentor – student teacher relationships

	Number of respondents = 42				
	Strongly agree	agree	Not sure	Disagree	Strongly disagree
Student teachers always responded to advice	39.0	53.7	4.9	2.4	0.0

Student teachers acted on advice	26.8	63.4	4.9	2.4	2.4
Student teachers are useful to the school	42.9	50.0	2.4	2.4	0

From the focus group discussion mentors revealed that most student teachers were very cooperative, obedient, responded to advice, ready to learn and change for the better. Most of mentors indicated willingness to recommend student teachers to administrators to be recruited in their schools after completion of their studies. Mentors indicated that a small number of student teachers took no advice from mentors because they viewed mentors as stumbling blocks to their freedom

Student Teachers' Behaviour Patterns

When mentors were asked whether student teachers needed to improve in the area of discipline, 67.8% of the mentors indicated there was need for student teachers to improve in matters of discipline. However, 82.8% and 78.1% of the mentors felt student teachers rarely absented themselves from school and rarely gave excuses from duty. On whether student teachers acted as role models to pupils, 78.1% of the mentors saw student teachers as role models to pupils. Table 7 provides details of the mentors' responses.

Table 7: Mentors views on whether student teachers required discipline

	Number of respondents = 42				
	Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Student teachers required discipline	26.8	39.0	14.6	9.8	9.8
Student teachers rarely absent from school	46.3	36.6	7.3	7.3	2.4
Students teachers rarely gave excuse from duty	41.5	36.6	2.4	14.6	2.4
Student teachers always acted as role model	22.0	56.1	7.3	12.2	2.4

It was revealed from the focus group discussion that most student teachers adhered to school regulations, well behaved and were obedient. It was also clear from the mentors that some student teachers were badly behaved and engaged in illicit activities such as beer drinking. Other student teachers were overzealous, very proud and highly rated themselves, displayed antisocial behavioural tendencies towards student teachers from other universities, were resistant to change, disregarded school administrators and were poorly dressed thereby disregarded the dress code. Mentors also pointed out that the generation gap was a barrier for student teacher to open up to the mentors and the mentors to accept student teachers' foreign classroom practices.

On what training institutions could do to improve student teachers undesired attributes, mentors called for counselling student teachers on their poor behaviour, poor dressing (short dresses and tight trousers), disobedience, lack of respect and lack of appreciation for school administrators during school experience. They also suggested that institutions training teachers should collaborate with schools regularly to outline what was expected of student teachers. In addition, mentors should be oriented regularly on their roles regarding student supervision.

Participation in Co – Curricular Activities

As to whether student teachers participated in co – curricular activities 63.5% of the mentors agreed that student teachers participated in co – curricular activities while (11.9%) felt that student teachers did not participate in co – curricular activities. The focus group discussion unanimously agreed that student teachers were active in sports activities and that their participation depended on their fields of interest. Mentors indicated that a few student teachers participate in co- curricular activities because they had no interest in sports and therefore shun co-

curricular activities. Mentors added that student teachers were extremely helpful in co – curricular activities in major sporting competitions at school, district, provincial and national levels.

DISCUSSION

Student Teachers Classroom Management

Mentors' views of mathematics and science student teachers' classroom management practices were generally positive. Student teachers had appropriate classroom management skills that enhanced effective teaching and learning. Most student teachers according to the mentors prepared detailed lesson plans that could be used by any standby teacher, prepared different lesson plans for different classes of the same level, spent time to adequately prepare for the coming lessons, created conducive classroom layouts and enabling environments for effective teaching and learning. Mentors also observed that student teachers worked on their weaknesses and improved in their lesson planning and lesson delivery with time in line with Barry and King (2002) who found that effective teachers spend a great deal of time on careful and detailed planning. Barry and King (2002) further found that student teachers' planning skills improved during the preparation phase of school experience. The findings further support previous research findings asserting that school experience enhances student teachers' acquisition of interactive, communication and classroom management skills (Al Naji, 2000; Hammad, 2005; & McNamara, 1992) critical for pupils' good academic performance.

It was also clear according to the mentors that a number of student teachers were aware or familiar with problem solving structures in the schools they practiced and used these structures to sort out pupils' disciplinary cases effectively. With this then mentors felt that most student teachers rarely had disciplinary problems with pupils.

However, while a number of student teachers managed their classrooms well, mentors also noted that some student teachers had challenges in managing their classes. Among the factors that led these students fail to manage their classes were their poor pupil – student teacher relationships. Some student teachers took pupils for their friends. In extreme but very rare cases male student teachers had intimate relationships with the pupils of the opposite sex. Another factor that led to poor classroom management was that these student teachers failed to adequately prepare for lessons; they had poorly prepared lesson plans or used inappropriate instructional strategies. The poor mentor – student teacher interpersonal relationships among some student teachers was another hindrance to effective classroom management because mentors were unable to provide the required counsel. These findings agree with other studies that revealed that student teachers often felt poorly prepared in the area of classroom management (Jones, 2006; Clement, 2002; 1996; Meister & Melnick, 2003; Pilarski, 1994). The situation affects the effective delivery of the lessons. It has been reported that student teachers often feel underprepared during school experience because effective classroom management is both challenging and difficult (White, 1995 and Pilarski, 1994; Armstrong, 1976)). This may be arrested if student teachers were provided with the variety of discipline styles available for them to effectively interact with pupils and ensure acceptable levels of class control.

Student Teachers Instructional Strategies

The study indicates that most science and mathematics student teachers use teacher centred approaches such as lecturing as well as learner centred teaching strategies like class discussions. The factors that influenced the teaching strategies student teachers used were the desire to maintain classroom management, the unavailability of teaching and learning materials in schools and lack of certain skills associated with the use of some teaching strategies such as role play.

While science and mathematics are practical subjects, according to the study, mentors revealed that student teachers avoided using strategies such as experiments, field trips, Discovery, Project method and role play which encouraged hands on experiences and the development of creativity, innovation, critical thinking and discovery. Effective pedagogy can reduce problematic student behaviour but cannot eliminate it (Emmer & Stough, 2001; Oliver & Reschly, 2007) and promote fast grasping of concepts, retention of knowledge and enhance personal and national development. The current trend in which lessons are devoid of practical and hands - on teaching strategies

should be a source of worry and concern for training institutions because of the serious negative effects they have on national scientific, technological and socio – economic development.

The study revealed that among the other things that could be done to improve the student teachers' instructional skills was to ensure that the educational courses offered to students by training institutions were strengthened. Strengthened educational courses would provide student teachers with clear approaches of handling learners, increasing their confidence and also the ability to effectively plan for the lessons

Student Teacher – Mentor Relationship

The study revealed that generally there was a good student teacher - mentor relationship. The positive rapport created ensured that mentors were able to freely interact with and provide guidance to student teachers. In return student teachers were able to ask for assistance from the mentors whenever they had challenges in their school experience. This shows that mentoring is a symbiotic relationship benefiting and satisfying the mentor as well as the mentees. This was in with earlier studies which found that the relationship between student teachers and mentors is positive and collaborative in which the duo cared for each other personally and professionally and had a positive impact on student teachers' school experience (Glenn, 2006; Su, 1992). In fact several studies have shown that a good student teacher - mentor relationship is a precursor to a student teacher's ability to control the class, set appropriate lesson objectives, effectively deliver lessons (Loizou, 2011; Sempowicz & Hudson, 2011; Nkhata, Chituta, Banda, Jumbe & Chobe, 2016), acquire valuable knowledge, skills and positive attitudes that make them feel part of the school (Kiggundu & Nayimuli, 2009) and enjoy their school experience. This was evident from the findings because mentors indicated that student teachers went all the way to "model behaviours and skills appropriate for student teachers' positive and effective school experience". This underscores that teaching requires high levels of interaction for developing positive relationships; hence developing personable attributes that lead towards facilitating such relationships was considered desirable (Hudson, 2013). Health student teacher – mentor relationships helps student teachers to become part of the educational system.

From the study, it was also evident that not all was rosy. There were rare instances when student teacher - mentor relationships during school experience were poor and sour when student teachers had no respect for mentors and the school management, refused to take up responsibilities and advice and saw mentors as intruders in their personal lives. Although rare, such conflicts and undesirable relationships are reported to have their origin in mentors' inability to match their mentorship style to the student teachers' capacity to perform instructional tasks (Ralph, 2000), asymmetrical power relationships in which mentors look down on student teachers or student teachers perceptions that they were being over used at the expense of professional development and recognition (Lawrence, 2005); White, 2000). In such situations, student teachers may be demotivated, isolated and lonely, frustrated and perceive their school experience as horrible and time wasting.

Behaviour Patterns

The findings revealed that student teachers displayed very good interpersonal relationships. Student teachers were neither problematic nor pompous and their dress code was acceptable. According to them the mentor – student teacher relationships were either good or very good. This finding was in line with Maphosa and Nambe's study in Zimbabwe that revealed that the mentor – student teacher was very good (Maphosa & Ndamba, 2012). They consulted, cooperated and were obedient. It was clear that some of the mentors acted as precipitators for the student teachers' displayed behaviours. From the findings it was evident that if mentors were considerate and friendly then student teachers displayed acceptable social relationships. This is in agreement with findings of White (2000) and Lawrence (2005) that revealed that in most cases, there were cases of asymmetrical power relationships between the mentor and student teacher. They argued that more often, student teachers felt that their mentors looked down upon student teachers, over used them without giving them due recognition (White, 2000; Lawrence, 2005) and belittled each time mentors instructed them to undertake certain activities (Mapolisa & Tshabalala, 2014) creating in student teachers resentment. In fact the findings were also supported by Wilson (2009) who also found there were mentor-student teacher personality clashes.

Participation in Co – Curricular Activities

Co-curricular activities fall outside the realm of the core curriculum of school education (Marais 2011) and could be considered as purely voluntary. However, the findings of this study reveal that student teachers participated in the co – curricular activities. This sharply contradicts the findings of Kiggundu and Nayimuli (2009) who reported that student teachers were not fully involved in co – curricular activities during their school experience. During teacher training, student teachers are provided skills not only to deal with pupils within the classroom settings but also in out of classroom environmental setting. This is what makes them useful to the schools they go for school experience. They are put on duty, in charge of sports such as netball, football, basketball and clubs like debate, anti HIV/AIDS, Science and Mathematics clubs. In being fully involved in co – curricular activities student teachers uphold the sociological and psychological concepts that educating pupils must be all rounded to enhance social interaction, leadership, healthy recreation, self-discipline and self-confidence in learners.

CONCLUSION

The study revealed that mentors had positive views of Mathematics and Science student teachers' school experience. In addition student teachers' classroom management was generally satisfactory in spite of the isolated cases of poor classroom management practices. It was also found that student teachers adequately prepared for their lessons. However mentors were concerned that some teaching strategies such as experiments, project methods, field trips and role play critical to the learners' cognitive and psychomotor development were ignored. Student teachers behavioural patterns were generally acceptable although there were isolated cases of undisciplined student teachers. It was also evident from the study that positive relationships were created between mentors and student teachers. The positive mentor – student teacher relationship enhanced student teachers' sound school experience because mentors were able to offer guidance to the student teachers.

References

Ahmad, I., Rauf, M., Zeb, A., Rehman, S., Khan, R., Rashid, A., & Ali, F. (2012).Teachers' Perceptions of Classroom Management, Problems and its Solutions: Case of Government Secondary Schools in Chitral, Khyber Pakhtunkhwa, Pakistan. *International Journal of Business and Social Science, 3*(24), 173.

Anderson, L. (2011). *Research in Education*. London, England: Routledge.

Armstrong, D. A. (1976). Equipping Student-Teachers to Deal with Classroom Control Problems. *High School Journal*, 60, 1-9.

Al Najei, H. (2000). The evaluation of pre-service teacher preparation program at the University of Mutah from the perspective of graduate students. *Muta for Research and Studies*, 1(3), 179-205.

Arnold, P. (2002). Cooperating teachers' professional growth through supervision of student teachers and participation in a collegial study group. *Teacher Education Quarterly, 29*(2), 123 – 132.

Azure, J. A. (2015). Influence of the pedagogical content knowledge of mentor teachers and college tutors to classroom practice of student teachers. *American Journal of Educational Research, 3*(10), 1216 – 1223.

Barry, K., & King, L. (2002). *Beginning Teaching and Beyond*, (3rd Ed.). Tuggerah, NSW: Social Science Press.

Berliner, D.C. (1988). *Effective classroom management and instruction: A knowledge base for consultation.* Washington, DC: National Association of School Psychologists.

Brimfield, R., & Leonard, R. (1983). The student teaching experience: A time to consolidate one's perceptions. *College Student Journal*, 17, 401–406.

Bubb, S. (2010). *The Guide for New Teachers*. New York, NY: Routledge Falmer.

Chakanyuka, S. (2006). *Mentoring in Education*. Harare, Zimbabwe: Zimbabwe Open University.

Clarke, A., Triggs, V., & Nielsen, W. (2014). Cooperating teacher participation in teacher education: *A review of the literature. Review of Educational Research,* 84(2), 163e202.

Clement, M. C. (2002). What cooperating teachers are teaching student teachers about classroom management. *The Teacher Educator, 38 (1)*, 47-62.

Dodge, D., Rudick, S., & Colker, L. (2009). Learning Environment. The Creative Curriculum: Interest Areas. Retrieved from http://www.teachingstrategies.com/content/pageDocs/CC4_Ch2_exrpt.pdf

Dreikurs, R., Grunwald, B. B., & Pepper, F.C. (1998). *Maintaining sanity in the classroom: Classroom management techniques* (2nd Ed.). Washington, DC: Taylor and Francis.

Emmer, E. T., & Stough, L. M. (2001). Classroom management: A critical part of educational psychology, with implications for teacher education. *Educational Psychologist, 36*, 103-112.
Evertson, C. M. & Weinstein, C. S. (Ed.). (2006). *Handbook of Classroom Management: Research, Practice, and Contemporary Issues*. Mahwah, NJ: Lawrence Erlbaum Associates.
Feldman, J. R. (1997). *Wonderful rooms where children can bloom*. Peterborough, NH: Crystal Springs Books.
Fernandez, M. L. & Erbilgin, E. (2009). Examining the supervision of mathematics student teachers through analysis of conference communications. *Educational studies in mathematics, 72* (1), 93-110.
Freiberg, H.J., & Driscoll, A. (2005). *Universal teaching strategies (4th Ed.)*. Boston: Pearson.
Froyen, L. A., & Iverson, A. M. (1999). *Schoolwide and classroom management: The reflective educator-leader* (3rd Ed.). Upper Saddle River, NJ: Prentice Hall.
Frykholm, J. A. (1996). Pre-service teachers in mathematics: *Struggling with the standards. Teaching and Teacher Education, 12*(6), 665-681. Doi: 10.1016/S0742-051X (96)00010-8.
Ganser, T. (1996). What do mentors say about mentoring? *Journal of Staff Development, 17* (3), 36–39.
Glen, W. J. (2006). Model versus mentor: defining the necessary qualities of the effective cooperating teacher. *Teacher education quarterly*, 33, 85-95.
Goh, P. S., & Matthews, B. (2011). Listening To the Concerns of Student Teachers In Malaysia during Teaching Practice. *Australian Journal of Teacher Education, 36(3)*. http://dx.doi.org/10.14221/ajte.2011v36n3.2
Guyton, E., & McIntyre, D. J. (1990). *Student teaching and school experiences.* In W. R. Houston (Ed.), Handbook of research on teacher education (pp. 514–534). New York: Macmillan.
Halai, A. (2006). Mentoring in- service teachers: Issues of role diversity. *Teaching and Teacher Education,* 22, 700–710.
Hammad, S. (2005). The reality of practicum in the areas of Al-Quds Open University in Gaza Governorates from the perspective of students. *Journal of the Islamic University,* 13(1), 155-193.
Haney, A. (1997). The role of mentorship in the workplace. In M. C. Taylor. (Ed.), *Workplace education* (pp. 211- 228). Toronto: Culture Concepts. M*anagement and instruction: A knowledge base for consultation.* Washington, DC: National Association of School Psychologists.
He, Y. (2010). Strength-based mentoring in pre-service teacher education: A literature review. *Mentoring & Tutoring: Partnership in Learning* 17(3), 263–275.
Holloway, J. (2001). The benefits of mentoring. *Educational Leadership, 58*(8), 85-86.
Hudson, P. (2013). Mentoring as professional development: "Growth for both" mentor and mentee. Professional Development in Education, 39(5), 771e783.
Hudson, P. (2010). Mentors report on their own mentoring practices. Australian Journal of Teacher Education, 35(7), 30-42.
Kagoda, A. M & Sentongo J. (2015). Practicing Teachers' Perceptions of Teacher Trainees: Implications for Teacher Education, Horizon Research Publishing.
Kiggundu, E., and Nayimuli, S. (2009). Teaching practice: A make or break phase for student teachers. *South African Journal of Education, 29*(3), 345-358.
Kombo, N. J., & Kira, S. H. (2013). *Issues in mentoring*. London, England: The Open University.
Koskela, R., & Ganser, T. (1995, Feb 18-22). *Exploring the role of cooperating teacher in relationship to personal career development*. Paper presented at the Annual meeting of the Association of Teacher Educators, Detroit, MI.
Lawrence, S. (2005). *An Introduction to Curriculum Research and Development*. London, England: Butler and Tanner, Limited.
Li, Y. (2009). The perspectives and experiences of Hong Kong preschool teacher mentors: Implications for mentoring. Teacher Development, 13(2), 147e158.
Loizou, E. (2011). The diverse facets of power in early childhood mentor–student teacher relationships. *European Journal of Teacher Education*, 34(4), 373-386.
Lu, H. L. (2010). Research on peer coaching in pre-service teacher education – A review of literature. *Teaching and Teacher Education, 26*, 748-753.
Maphosa, C., Shumba, A., & Shumba, J. (2007). Mentorship for students on teaching practice in Zimbabwe: Are student teachers getting a raw deal? *South African Journal of Higher Education, 2*, 296-307.
Maphosa, R., & Ndamba, G. T., (2012). Supervision and assessment of student teachers: A Journey of discovery for mentors in Bulawayo, Zimbabwe. *Journal of Emerging Trends in Educational Research and Policy Studies, 3*(1), 76-82.
Marais P, (2011). The significance of student teachers' involvement in co-curricular activities. *International Journal for e-Learning Security, 1*(2), 81 – 88.

Marais, P., & Meier, C. (2004). Hear our Voices: Student Teachers' Experiences during Practical Teaching. *African Education Review, 21*, 296-307.

Maria, L. F., & Evrim, E. (2009). Examining the supervision of mathematics student teachers through analysis of conference communications. *Educational Studies in Mathematics, 72*(1), 93 – 110.

Marzano, R. J., Marzano, J. S., & Pickering, D. J. (2003). *Classroom management that works. Research-based strategies for every teacher*. Alexandria, VA: Association for Supervision and Curriculum Development.

McNamara, D. (1992). The reform of teacher education in England and Wales. Teacher competence: panacea or rhetoric. *Journal of Education for Teaching,* 18, 273-275.

Meister, D. G., & Melnick, S. A. (2003). National new teacher study: Beginning teachers' concerns. *Action in Teacher Education,* 24 (4), 87-94.

Milner, E. J. (Ed). (1959). *The supervising teacher. Thirty-eighth yearbook of the Association for Student Teaching*. Dubuque, Iowa: W. C. Brown.

Nilsson, P. & Van Driel, J. (2010). Teaching together and learning together: Primary science student teachers' and their mentors' joint teaching and learning in the primary classroom. *Teaching and Teacher Education, 26*, 1309-1318.

Nkhata, L., Chituta, D., Banda, A., Choobe, B., & Jumbe, J. (2016). Mathematics and Science Student Teachers' Perceptions of Their Classroom Management Practices during Practicum: A Case of Copperbelt University Students. *American Journal of Educational Research*, *4*(15), 1106-1115.

Oliver, R. M., & Reschly, D. J. (2007). Effective classroom management: Teacher preparation and professional development. TQ Connection Issue Paper on improving student outcomes in general and special education. *Washington: National Comprehensive Centre for Teacher Quality*. Retrieved from http://www.tqsource.org/topics/effectiveClassroomManagement.pdf

Perry, R. (2004). *Teaching practice for early childhood. A guide for students*. Retrieved fromhttp://wwwRoutledge.comcatalogues./0418114838.pdf

Pilarski, M. J. (1994). Student teachers: Underprepared for classroom management? *Teaching Education, 6 (1*), 77-80.

Ralph, E. G (2000). Aligning mentorship style with the beginning teachers' developments: Contextual supervision. Alta. J. Educ. Res. 46(4):211-326Samkange, W. (2015). Examining the role of the mentor in teacher education in Zimbabwe. *Global Journal of Advanced Research, 2*(2), 521-533.

Roehrig, A., Pressley, M., & Talotta, D. (2002). In Roehrig A. D. Pressley. M. Talotta& D. A (Eds.), Stories of beginning teachers: First year challenges and beyond . University of Notre Dame Press.

Sempowicz, T., & Hudson, P. (2011). Analysing mentoring dialogues for developing a pre-service teacher's classroom management practices. *Australian Journal of Teacher Education, 36*(8), 1 - 16.

Snowman, J., Dobozy, E., Scevak, J., Bryer, F., Bartlett, B., & Biehler, R. (2009). *Psychology: Applied to teaching*. Milton, Qld: John Wiley & Sons.

Schatz-Oppenheimer, O. (2016). Being a mentor: Novice teachers' mentors' conceptions of mentoring prior training. Professional Development in Education. https://doi.org/10.1080/19415257.2016.1152591.

Schwille, S. (2008). The professional practice of mentoring. American Journal of Education, 115, 139–167.

Su, J. Z. X. (1992). Sources of influence in preservice teacher socialization. *Journal of education for teaching,* 18, 239-258

Tan, O.S., Parsons, R. D., Hinson, S.L., & Sardo-Brown, D. (2003). *Educational psychology: A practitioner-researcher approach.* Australia: Thomson

Tomlinson, P. (1995). *Understanding mentoring: Reflective strategies for school-based teacher preparation*. Buckingham: Open University Press.

Tauer, S. M. (1998). The mentor-protégé relationship and its impact on the experienced teacher. *Teacher and Teacher Education,* 14(20), 205–218.

Vacc, N. N., & Bright, G. W. (1999). Elementary pre-service teachers' changing beliefs and instructional use of children's mathematical thinking. *Journal for Research in Mathematics Education, 30*(1), 89-110.doi: 10.2307/749631.

White, C. (1995). Making classroom management approaches in student education relevant. *Teacher Education and Practice,* 11(1), 15-21.

White, D. (2000). *Micro-teaching in initial teacher training*. Harare, Zimbabwe: Longman.

Wilkinson, K. (2009). *Interpersonal communication between mentors and student teachers*. California, CA: Wadsworth Publishing Company

Wunsch, M. (1994). New directions for mentoring: An organizational development perspective. *New Directions for Teaching and Learning*, 57, 9–24.

Yee, A. (1969). Do cooperating teachers influence the attitudes of student teachers? *Journal of Educational Psychology, 60*(4), 127-112.

Yendol-Hoppey, D. (2007). Mentor teachers' work with prospective teachers in a newly formed professional development school: Two illustrations. *Teachers College Record,* 109 (3), 669e698.